



**GOVERNMENT POLYTECHNIC, KORAPUT  
DEPARTMENT CIVIL ENGINEERING**

Discipline: <b>CIVIL ENGG</b>	Semester: <b>6<sup>TH</sup></b>	Name of the Teaching Faculty: <b>ABHISEK MOHANTY,PTGF</b>
Subject: – <b>LAND SURVEY II</b>	No. of days/pe rweek class allotted: <b>05</b>	Semester From date: <b>13.03.2023</b> To Date: <b>23.05.2023</b>  No. of Weeks: <b>13</b>
<b>PRE-REQUISIT E</b>	Basic knowledge about Engineering mechanics.	
<b>COURSE OUTCOME S</b>	<b>CO1:</b> Solve numerical problems in the segment off tacheometry <b>CO2:</b> Comprehend concepts of curve ranging and solve simple numerical <b>CO3:</b> Study and interpret maps <b>CO4:</b> Comprehend basics of GIS and prepare map using GIS data <b>CO5:</b> Comprehend basics of GPS setup, data processing and export	
<b>Wee k</b>	<b>Clas s Day</b>	<b>Theory / Practical Topics</b>
1 <sup>ST</sup>	1 <sup>ST</sup>	<b>TACHEOMETRY:</b> (Only concepts; applications without derivation)
	2 <sup>ND</sup>	Principles, stadia constants determination
	3 <sup>RD</sup>	2 Stadia tacheometry with staff held vertical and with line of collimation horizontal or inclined, numerical problems
	4 <sup>TH</sup>	Elevations and distances of staff stations – numericalproblems
	5 <sup>TH</sup>	<b>CURVES :</b>
2 <sup>ND</sup>	1 <sup>ST</sup>	Compound, reverse and transition curve, Purpose & use of different types of curves in field
	2 <sup>ND</sup>	Elements of circular curves, numerical problems
	3 <sup>RD</sup>	<b>QUIZ</b>
	4 <sup>TH</sup>	Preparation of curve table for setting out
	5 <sup>TH</sup>	Setting out of circular curve by chain and tape and by instrument angular methods
3 <sup>RD</sup>	1 <sup>ST</sup>	(i) offsets from long chord, (ii) successive bisection of arc, (iii) offsets from tangents, (iv) offsets from chord produced, (v) Rankine's method of tangent angles (No derivation)
	2 <sup>ND</sup>	Obstacles in curve ranging – point of intersection inaccessible
	3 <sup>RD</sup>	<b>BASICS ON SCALE AND BASICS OF MAP:</b>
	4 <sup>TH</sup>	Fractional or Ratio Scale, Linear Scale, Graphical Scale
	5 <sup>TH</sup>	What is Map, Map Scale and Map Projections
4 <sup>TH</sup>	1 <sup>ST</sup>	How Maps Convey Location and Extent
	2 <sup>ND</sup>	How Maps Convey characteristics of features, How Maps Convey Spatial Relationship
	3 <sup>RD</sup>	<b>Classification of Maps :</b> Physical Map Topographic Map Road Map
	4 <sup>TH</sup>	Political Map Economic & Resources Map Thematic Map Climate Map
	5 <sup>TH</sup>	<b>QUIZ</b>
5 <sup>TH</sup>	1 <sup>ST</sup>	<b>SURVEY OF INDIA MAP SERIES:</b>
	2 <sup>ND</sup>	Open Series map : Defense Series Map Map Nomenclature

	3 <sup>RD</sup>	Quadrangle Name Latitude, Longitude, UTM's , Contour Lines
	4 <sup>TH</sup>	Magnetic Declination ,Public Land Survey System Field Notes
	5 <sup>TH</sup>	<b>BASICS OF AERIAL PHOTOGRAPHY, PHOTOGRAMMETRY, DEM AND ORTHO IMAGE GENERATION:</b>
6 <sup>TH</sup>	1 <sup>ST</sup>	Aerial Photograph, Film, Focal Length, Scale
	2 <sup>ND</sup>	Types of Aerial Photographs (Oblique, Straight) Photogrammetry:
	3 <sup>RD</sup>	Classification of Photogrammetry
	4 <sup>TH</sup>	Aerial Photogrammetry
	5 <sup>TH</sup>	Terrestrial Photogrammetry
7 <sup>TH</sup>	1 <sup>ST</sup>	<b>QUIZ</b>
	2 <sup>ND</sup>	Terrestrial Photogrammetry
	3 <sup>RD</sup>	Acquisition of Imagery using aerial and satellite platform,Control Survey
	4 <sup>TH</sup>	Geometric Distortion in Imagery Application of Imagery and its support data Orientation and Triangulation
	5 <sup>TH</sup>	Stereoscopic Measurement : X-parallax, Y-parallax
8 <sup>TH</sup>	1 <sup>ST</sup>	<b>MODERN SURVEYING METHODS :</b>
	2 <sup>ND</sup>	6.1 Principles, features and use of (i) Micro-optic theodolite, digital theodolite 6.2 Working principles of a Total Station (Set up and use of total station to measure angles, distances of points under survey from total station and the co-ordinates (X,Y,Z)
	3 <sup>RD</sup>	<b>QUIZ</b>
	4 <sup>TH</sup>	<b>BASICS ON GPS &amp; DGPS AND ETS:</b>
	5 <sup>TH</sup>	<b>Global Positioning</b>
9 <sup>TH</sup>	1 <sup>ST</sup>	Working Principle of GPS,GPS Signals,Errors of GPS,Positioning Methods
	2 <sup>ND</sup>	<b>DGPS:</b> - Differential Global Positioning System , Base Station Setup , Rover GPS Set up
	3 <sup>RD</sup>	Download, Post-Process and Export GPS data , Sequence to download GPS data from flashcards
	4 <sup>TH</sup>	Sequence to Post-Process GPS data , Sequence to export post process GPS data
	5 <sup>TH</sup>	Sequence to export GPS Time tags tofile
10 <sup>TH</sup>	1 <sup>ST</sup>	ETS: - Electronic Total Station ,Distance Measurement
	2 <sup>ND</sup>	Continuation
	3 <sup>RD</sup>	Angle Measurement , Leveling
	4 <sup>TH</sup>	Determining position 7.1.5 Reference networks Errors and Accuracy
	5 <sup>TH</sup>	<b>QUIZ</b>
11 <sup>TH</sup>	1 <sup>ST</sup>	<b>BASICS OF GIS AND MAP PREPARATION USING GIS</b>
	2 <sup>ND</sup>	Components of GIS, Integration of Spatial and Attribute Information
	3 <sup>RD</sup>	Three Views of Information System
	4 <sup>TH</sup>	Database or Table View, Map View and Model View , Spatial Data Model
	5 <sup>TH</sup>	Continuation
12 <sup>TH</sup>	1 <sup>ST</sup>	Spatial Data Model
	2 <sup>ND</sup>	Attribute Data Management and Metadata Concept
	3 <sup>RD</sup>	Continuation
		Prepare data and adding to Arc Map
	5 <sup>TH</sup>	Organizing data as layers
13 <sup>TH</sup>	1 <sup>ST</sup>	Editing the layers.
	2 <sup>ND</sup>	Switching to Layout View

	3 <sup>RD</sup>	Change page orientation.
	4 <sup>TH</sup>	Removing Borders
	5 <sup>TH</sup>	Rivision

**LEARNING RESOURCES:**

- 1 D. Gaikwad Advanced Surveying S.Chand
- 2 B. C. Punmia Surveying Vol. I, II, III Laxmi Publication, Delhi - 06
- 3 R. Agor A text book of surveying and leveling Khanna Publishers, Delhi 6
- 4 N. N. Basak Surveying and Levelling Tata Mcgraw Hill

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## GOVERNMENT POLYTECHNIC, KORAPUT DEPARTMENT CIVIL ENGINEERING

Discipline: <b>CIVIL ENGG</b>	Semester: <b>6<sup>TH</sup></b>	Name of the Teaching Faculty: <b>RABINARAYAN HOTA,PTGF</b>
Subject: <b>CONSTRUCTION MANAGEMENT</b>	No. of days/pe rweek class allotted: <b>05</b>	Semester From date: <b>13.02.2023</b> To Date: <b>23.05.2023</b> No. of Weeks: <b>13</b>
<b>PRE-REQUISIT E</b>	Basic knowledge about Construction Technology	
<b>COURSE OUTCOME S</b>	<b>CO1:</b> Develop schedules for construction project <b>CO2:</b> Realize significance of organizational behavior towards successful functioning <b>CO3:</b> Explain the important terminology related to materials management <b>CO4:</b> Understand construction quality indicators and their measurement <b>CO5:</b> Understand construction quality indicators and their measurement	
<b>Wee k</b>	<b>Clas s Day</b>	<b>Theory / Practical Topics</b>
1 <sup>ST</sup>	1 <sup>ST</sup>	<b>Introduction To Construction Management</b> : Aims and objectives of construction management.
	2 <sup>ND</sup>	Functions of construction management.
	3 <sup>RD</sup>	The construction team components
	4 <sup>TH</sup>	Owner,engineer,architect,contractor-their functions and interrelationship and jurisdiction. Resources for construction management-men,machines,materials,money
2 <sup>ND</sup>	1 <sup>ST</sup>	<b>Constructional Planning</b> :Importance of Construction Planning
	2 <sup>ND</sup>	Developing work breakdown structure for construction work
	3 <sup>RD</sup>	Construction Planning stages-Pre-tender stage, Post-tender stage.
	4 <sup>TH</sup>	Construction scheduling by Bar charts-preparation of Bar Charts for simple construction works
3 <sup>RD</sup>	1 <sup>ST</sup>	<b>QUIZ</b>
	2 <sup>ND</sup>	Preparation of schedules for labour materials,machinery, finance for small works
	3 <sup>RD</sup>	Limitation of Bar charts Construction scheduling by network techniques-definition of terms ,PERT and CPM techniques, advantages and disadvantages of two techniques, network analysis, estimation of <b>time and</b> critical path, application of PERT and CPM techniques in sample construction works.
4 <sup>TH</sup>	4 <sup>TH</sup>	<b>Materials and Stores Management</b>
	1 <sup>ST</sup>	Classification of Stores-storage of stock. Issue of materials-indent , invoice, bin card
	2 <sup>ND</sup>	<b>Construction Site Management</b> :
	3 <sup>RD</sup>	Job Lay out-Objectives, Review plans, specifications, Lay out of equipments.
5 <sup>TH</sup>	4 <sup>TH</sup>	
	1 <sup>ST</sup>	Location of equipment, organizing labour at site.
	2 <sup>ND</sup>	Job lay out for different construction sites. Principle of storing material at



		site
	3 <sup>RD</sup>	<b>Construction Organization:</b> Introduction – Characteristics, Structure, importance.
	4 <sup>TH</sup>	Organization types-line and staff, functions and their characteristics
6 <sup>TH</sup>	1 <sup>ST</sup>	Principles of organization- meaning and significance of terms- control, authority, responsibility, job & task.
	2 <sup>ND</sup>	Leadership-necessity, styles of leadership, role of leader
	3 <sup>RD</sup>	Human relations-relations with subordinates, peers, Supervisors, characteristics of group behavior, mob psychology, handling of grievances, absenteeism, labour welfare.
	4 <sup>TH</sup>	<b>QUIZ</b>


### QUIZ

7 <sup>TH</sup>	1 <sup>ST</sup>	<b>Construction Labour and Labour Management:</b>
	2 <sup>ND</sup>	Preparing Labour schedule , Essential steps for optimum labour output
	3 <sup>RD</sup>	Labour characteristics , Wages & their payment
	4 <sup>TH</sup>	Labour incentives Motivation- Classification of motives, different approaches to motivation
8 <sup>TH</sup>	1 <sup>ST</sup>	<b>Equipment Management</b>
	2 <sup>ND</sup>	Preparing the equipment schedule , Identification of different alternative equipment
	3 <sup>RD</sup>	Importance of Owning & operating costs in making decisions for hiring & purchase of equipment
	4 <sup>TH</sup>	Inspection and testing of equipment Equipment maintenance
9 <sup>TH</sup>	1 <sup>ST</sup>	<b>QUIZ</b>
	2 <sup>ND</sup>	<b>Quality Control</b>
	3 <sup>RD</sup>	Concept of quality in construction
	4 <sup>TH</sup>	Quality Standards- during construction, after construction, destructive & non destructive methods.
10 <sup>TH</sup>	1 <sup>ST</sup>	<b>Monitoring Progress :</b>
	2 <sup>ND</sup>	Programme and progress of work, Work study
	3 <sup>RD</sup>	Analysis and control of physical and financial progress corrective measures
	4 <sup>TH</sup>	<b>Safety Management In Construction:</b>
11 <sup>TH</sup>	1 <sup>ST</sup>	Importance of safety
	2 <sup>ND</sup>	causes and effects of accidents in construction works
	3 <sup>RD</sup>	Safety measures in worksites for excavation, scaffolding, formwork, fabrication and erection, demolition.
	4 <sup>TH</sup>	Development of safety consciousness Safety legislation- Workman's compensation act, contract labour act
12 <sup>TH</sup>	1 <sup>ST</sup>	<b>QUIZ</b>
	2 <sup>ND</sup>	<b>Role of Vulnerability Atlas of India in construction projects :</b>
	3 <sup>RD</sup>	Introduction to Vulnerability Atlas of India, Concepts of natural hazards and disasters and vulnerability profile of India. Definition of disaster related terms.
	4 <sup>TH</sup>	Earthquake hazard and vulnerability, Magnitude and intensity scales of earthquake, seismic zones, earthquake hazard maps, types of structures and damage classification, effects in housing and resistant measures.
13 <sup>TH</sup>	1 <sup>ST</sup>	Flood hazard and vulnerability, Flood hazard and Flood prone areas of the country, General protection of habitants and flood resistant construction.
	2 <sup>ND</sup>	Landslides, Tsunamis and Thunderstorm hazards and vulnerability, Landslide & Thunderstorm incidence maps, Measures against Tsunami hazards.
	3 <sup>RD</sup>	<b>RIVISION</b>

**LEARNING RESOURCES:**

- 1 M. R. Samal & R.L. Sahoo Construction Management Kalyani Publication
- 2 PS Gahlot & B M Dhir Construction planning and management New age international Publishers
- 3 Robert L Peurifoy & Willium B Ledbetter Construction Planning equipment and methods TMH Education

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**GOVERNMENT POLYTECHNIC, KORAPUT  
DEPARTMENT CIVIL ENGINEERING**

Discipline: <b>CIVIL ENGG</b>	Semester: <b>6<sup>TH</sup></b>	Name of the Teaching Faculty: <b>RABINARAYAN HOTA &amp; SHREEKANTA SAMAL,PTGF</b>
Subject: <b>ADVANCE CONSTRUCTION TECHNIQUE AND EQUIPMENT</b>	No. of days/pe rweek class allotted: <b>05</b>	Semester From date: <b>13.02.2023</b> To Date: <b>23.05.2023</b>  No. of Weeks: <b>13</b>
<b>PRE-REQUISIT E</b>	Basic knowledge about Engineering mechanics.	
<b>COURSE OUTCOME S</b>	<b>CO1:</b> Select proper material during construction in domain of advanced materials <b>CO2:</b> Select appropriate prefabrications in pursuance of standard codes <b>CO3:</b> Adopt structural requirements & Possible retrofits to improve earthquake resistance <b>CO4:</b> Comprehend requirement of various services need to be operational <b>CO5:</b> Comprehend necessity of soil reinforcing and prescribe appropriate strategy	
<b>Wee k</b>	<b>Clas s Day</b>	<b>Theory / Practical Topics</b>
1 <sup>ST</sup>	1 <sup>ST</sup>	<b>Advanced construction materials :</b>
	2 <sup>ND</sup>	Fibers and Plastics
	3 <sup>RD</sup>	Types of fibers- Steel, Carbon, glass fibers, Use of fibers as construction material, properties of Fibers.
	4 <sup>TH</sup>	Types of plastics- PVC, RPVC, HDPE, FRP, GRP etc. Colored plastic sheets
2 <sup>ND</sup>	1 <sup>ST</sup>	Continuation
	2 <sup>ND</sup>	<b>Artificial Timbers</b> – Properties and uses of artificial timber
	3 <sup>RD</sup>	Types of artificial timber available in market, strength of artificialtimber.
	4 <sup>TH</sup>	Miscellaneous materials – Properties and uses of acoustics materials
3 <sup>RD</sup>	1 <sup>ST</sup>	<b>QUIZ</b>
	2 <sup>ND</sup>	Wall claddings, plaster boards, micro-silica
	3 <sup>RD</sup>	Artificial sand, bonding agents, adhesives etc. 3 Prefabr
	4 <sup>TH</sup>	<b>Prefabrication</b>
4 <sup>TH</sup>	1 <sup>ST</sup>	Introduction, necessity and scope of prefabrication of buildings,
	2 <sup>ND</sup>	History of prefabrication, current uses of prefabrication , types of prefabricated systems, classification of prefabrication,
	3 <sup>RD</sup>	Advantages and disadvantages of prefabrication
	4 <sup>TH</sup>	Continuation
5 <sup>TH</sup>	1 <sup>ST</sup>	The theory and process of prefabrication, design principle of prefabricated systems
	2 <sup>ND</sup>	Types of prefabricated elements, modular coordination
	3 <sup>RD</sup>	<b>QUIZ</b>
	4 <sup>TH</sup>	Earthquake Resistant Construction
6 <sup>TH</sup>	1 <sup>ST</sup>	Building Configuration

	2 <sup>ND</sup>	Lateral Load resisting structures
	3 <sup>RD</sup>	Building characteristics
	4 <sup>TH</sup>	<b>QUIZ</b>
7 <sup>TH</sup>	1 <sup>ST</sup>	Effect of structural irregularities-vertical irregularities, plan configuration problems.
	2 <sup>ND</sup>	Effect of structural irregularities-vertical irregularities,
	3 <sup>RD</sup>	Plan configuration problems.
	4 <sup>TH</sup>	Safety consideration during additional construction
8 <sup>TH</sup>	1 <sup>ST</sup>	Alteration of existing Buildings.
	2 <sup>ND</sup>	Continuation
	3 <sup>RD</sup>	Additional strengthening measures in masonry building-corner reinforcement,
	4 <sup>TH</sup>	lintel band, sill band, plinth band, roof band, gable band etc
9 <sup>TH</sup>	1 <sup>ST</sup>	<b>Building Services</b>
	2 <sup>ND</sup>	Cold Water Distribution in high rise building, lay out of installation
	3 <sup>RD</sup>	Hot water supply – General principles for central plants-layout
	4 <sup>TH</sup>	<b>QUIZ</b>
10 <sup>TH</sup>	1 <sup>ST</sup>	Sanitation –soil and waste water installation in high rise buildings
	2 <sup>ND</sup>	Electrical services – requirements in high rise buildings ,Layout of wiring - types of wiring
	3 <sup>RD</sup>	Fuses and their types ,Earthing and their uses
	4 <sup>TH</sup>	Lighting – Requirement of lighting, Measurement of light intensity
	5 <sup>TH</sup>	Ventilation - Methods of ventilation (Natural and artificial Systems of ventilation) problems on ventilation
11 <sup>TH</sup>	1 <sup>ST</sup>	Continuation
	2 <sup>ND</sup>	Mechanical Services- Lifts, Escalator, Elevators – types and uses.
	3 <sup>RD</sup>	<b>QUIZ</b>
	4 <sup>TH</sup>	<b>Construction and earth moving equipments –</b>
12 <sup>TH</sup>	1 <sup>ST</sup>	Planning and selection of construction equipments
	2 <sup>ND</sup>	Study on earth moving equipments like drag line, t
	3 <sup>RD</sup>	Study and uses of compacting equipments like tamping rollers, Smooth wheel rollers, Pneumatic tired rollers and vibrating compactors
	4 <sup>TH</sup>	<b>Soil reinforcing techniques</b>
13 <sup>TH</sup>	1 <sup>ST</sup>	Necessity of soil reinforcing.
	2 <sup>ND</sup>	Use wire mesh and geo-synthetics.
	3 <sup>RD</sup>	Strengthening of embankments, Slope stabilization in cutting and embankments by soil reinforcing techniques
	4 <sup>TH</sup>	<b>Rivisuion</b>

**LEARNING RESOURCES:**

- 1 Agrawal & Shrikhande Earthquake Resistant Design of Structures Prentice-Hall of India Pvt. Ltd.
- 2 Swami Saran Reinforced Soil and its Engineering applications I.K.International Pvt. Ltd.
- 3 National building code of India\_ BIS
- 4 Fred & Greeno Building Services Hand book Routledge Publisher

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**GOVERNMENT POLYTECHNIC, KORAPUT  
DEPARTMENT CIVIL ENGINEERING**

Discipline: <b>CIVIL ENGG</b>	Semester: <b>6<sup>TH</sup></b>	Name of the Teaching Faculty: <b>SIREEKANTA SAMAL,PTGF</b>
Subject: <b>CONCRETE TECHNOLOGY</b>	No. of days/pe rweek class allotted: <b>05</b>	Semester From date: <b>13.02.2023</b> To Date: <b>23.05.2023</b>  No. of Weeks: <b>13</b>
<b>PRE-REQUISIT E</b>	Basic knowledge about RCC,BMBC	
<b>COURSE OUTCOME S</b>	<b>CO1:</b> Describe functions and characteristics of the concrete constituents <b>CO2:</b> Prescribe test requirements and methods for fresh and hardened concrete <b>CO3:</b> Design concrete mix <b>CO4:</b> Comprehend concrete production and inspection techniques <b>CO5:</b> Acquaint themselves with special concrete preparation and application	
<b>Wee k</b>	<b>Clas s Day</b>	<b>Theory / Practical Topics</b>
1 <sup>ST</sup>	1 <sup>ST</sup>	<b>Concrete as a construction material:</b>
	2 <sup>ND</sup>	Grades of concrete. Advantages and disadvantages of concrete
	3 <sup>RD</sup>	Continuation
	4 <sup>TH</sup>	Cement: 2.1 Composition, hydration of cement, water cement ratio and compressive strength, fineness of cement, setting time, soundness, types of cement
2 <sup>ND</sup>	1 <sup>ST</sup>	Continuation
	2 <sup>ND</sup>	Continuation
	3 <sup>RD</sup>	<b>Aggregate, Water and Admixtures:</b>
	4 <sup>TH</sup>	Classification and characteristics of aggregate, fineness modulus, grading of aggregate,I.S.383
3 <sup>RD</sup>	1 <sup>ST</sup>	<b>QUIZ</b>
	2 <sup>ND</sup>	Quality of water for mixing and curing.
	3 <sup>RD</sup>	Important functions, classification of admixtures, I.S 9103, accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures
	4 <sup>TH</sup>	<b>Properties of fresh concrete:</b>
4 <sup>TH</sup>	1 <sup>ST</sup>	Concept of fresh concrete, workability, slump test, compacting factor test, V-tee consistency test and flow test, requirement of workability,I.S.1199
	2 <sup>ND</sup>	Continuation
	3 <sup>RD</sup>	Continuation
	4 <sup>TH</sup>	<b>Properties of hardened concrete:</b>
5 <sup>TH</sup>	1 <sup>ST</sup>	Cube and cylinder compressive strengths, flexural strength of concrete, stress, strain and elasticity
	2 <sup>ND</sup>	phenomena of creep and shrinkage, permeability, durability of concrete, sulphate, chloride and acid
	3 <sup>RD</sup>	Chloride and acid attack on concrete, efflorescence
	4 <sup>TH</sup>	<b>Concrete mix Design :</b>

6 <sup>TH</sup>	1 <sup>ST</sup>	<b>Introduction</b> : Data or input required for mix design.
	2 <sup>ND</sup>	2 Nominal mix concrete & design mix concrete.
	3 <sup>RD</sup>	Basic consideration for concrete mix design, Methods of proportioning concrete mix – I.S Code method of mix design(I.S.10262)
	4 <sup>TH</sup>	<b>Production of concrete:</b>
7 <sup>TH</sup>	1 <sup>ST</sup>	Batching of materials, mixing of concrete materials, transportation, placing of concrete
	2 <sup>ND</sup>	Continuation
	3 <sup>RD</sup>	Compaction of concrete (vibrators), Curing of concrete, Formwork-requirements and types ,stripping of forms. (Concepts only)
	4 <sup>TH</sup>	<b>QUIZ</b>
8 <sup>TH</sup>	1 <sup>ST</sup>	<b>Inspection and Quality Control of Concrete</b>
	2 <sup>ND</sup>	Quality control of Concrete as per I.S.456, Factors causing the variations in the quality of concrete
	3 <sup>RD</sup>	Mixing, Transporting, Placing & curing requirements of Concrete as per I.S.456
	4 <sup>TH</sup>	Inspection and Testing as per Clause 17 of IS:456. Durability requirements of Concrete as per I.S:456
9 <sup>TH</sup>	1 <sup>ST</sup>	Continuation
	2 <sup>ND</sup>	Continuation
	3 <sup>RD</sup>	Special Concrete
	4 <sup>TH</sup>	1 Introduction to ready mix concrete, high performance concrete, silica fume concrete, shot-crete concrete or gunitting (Concepts only).
10 <sup>TH</sup>	1 <sup>ST</sup>	Continuation
	2 <sup>ND</sup>	Silica fume concrete, shot-crete concrete or gunitting (Concepts only).
	3 <sup>RD</sup>	<b>QUIZ</b>
	4 <sup>TH</sup>	Gunitting & its type
11 <sup>TH</sup>	1 <sup>ST</sup>	<b>Deterioration of concrete and its prevention:</b>
	2 <sup>ND</sup>	Types of deterioration, prevention of concrete deterioration,
	3 <sup>RD</sup>	Corrosion of reinforcement
	4 <sup>TH</sup>	Effects and prevention of corrosion
12 <sup>TH</sup>	1 <sup>ST</sup>	<b>Repair technology for concrete structures:</b>
	2 <sup>ND</sup>	Symptom, cause and prevention
	3 <sup>RD</sup>	<b>Remedy of defects during construction</b>
	4 <sup>TH</sup>	Cracking of concrete due to different reasons. racking of concrete due to different reasons.
13 <sup>TH</sup>	1 <sup>ST</sup>	Repair of cracks for different purposes, selection of techniques, polymer based repairs, common types of repairs.
	2 <sup>ND</sup>	Revision
	3 <sup>RD</sup>	Revision
	4 <sup>TH</sup>	Revision

### **LEARNING RESOURCES:**

- 1 M.S Shetty & A.K.Jain Concrete technology S.Chand
- 2 M.L.Gambhir Concrete technology Tata McGraw Hill.
- 3 A R Santhakumar. Concrete technology Oxford Publication

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**GOVERNMENT POLYTECHNIC, KORAPUT  
DEPARTMENT CIVIL ENGINEERING**

Discipline:  
**CIVIL ENGG.**

Semester:  
**6<sup>th</sup>**

Name of the Teaching Faculty: **RABINARAYAN HOTA , PTGF**

Subject:  
**CWP & MS  
PROJECT**

No. of  
days/per  
week class  
allotted:  
**05**

Semester From date: **13.02.2023**

To Date: **23.05.2023**

No. of Weeks: **13**

**PRE-  
REQUISITE**

Basic knowledge about construction management & ms project

**COURSE  
OUTCOMES**

**CO1:** Know the construction tools and select as per requirement.  
**CO2:** Construct brick walls and comprehend the challenges associated  
**CO3:** Fabricate formworks and reinforcements  
**CO4:** Know different plumbing tools and fixtures

<b>Week</b>	<b>Class Day</b>	<b>Theory / Practical Topics</b>
<b>1<sup>ST</sup></b>	<b>1<sup>ST</sup></b>	Study of tools required for construction of masonry.
	<b>2<sup>ND</sup></b>	Do
	<b>3<sup>RD</sup></b>	Do
	<b>4<sup>TH</sup></b>	Lay out Plan of a building.
	<b>5<sup>TH</sup></b>	Do
<b>2<sup>ND</sup></b>	<b>1<sup>ST</sup></b>	Do
	<b>2<sup>ND</sup></b>	Construction of 1 & 1 ½ Brick thick walls in English Bond in Mudmortar including a corner.
	<b>3<sup>RD</sup></b>	Do
	<b>4<sup>TH</sup></b>	Do
	<b>5<sup>TH</sup></b>	Construction of 1 & 1 ½ Brick thick Pillar in Mud mortar.
<b>3<sup>RD</sup></b>	<b>1<sup>ST</sup></b>	Do
	<b>2<sup>ND</sup></b>	Do
	<b>3<sup>RD</sup></b>	Bar bending and fabrication of reinforcements for a beam.
	<b>4<sup>TH</sup></b>	Do
	<b>5<sup>TH</sup></b>	Do
<b>4<sup>TH</sup></b>	<b>1<sup>ST</sup></b>	Bar bending and fabrication of reinforcements for a slab.
	<b>2<sup>ND</sup></b>	Do
	<b>3<sup>RD</sup></b>	Do
	<b>4<sup>TH</sup></b>	Bar bending and fabrication of reinforcements for a lintel with chajja.
	<b>5<sup>TH</sup></b>	Do
<b>5<sup>TH</sup></b>	<b>1<sup>ST</sup></b>	Do

	2 <sup>ND</sup>	Bar bending and fabrication of reinforcements for a column.
	3 <sup>RD</sup>	Do
	4 <sup>TH</sup>	Do
	5 <sup>TH</sup>	Conducting a Non destructive compressive strength test on concrete beam using rebound Hammer as per I.S:1311(Part-2)-1992.
6 <sup>TH</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	Do
	3 <sup>RD</sup>	Study of pipe joints and plumbing fixtures.
	4 <sup>TH</sup>	Do
	5 <sup>TH</sup>	Do
7 <sup>TH</sup>	1 <sup>ST</sup>	<b>Field visits</b>
	2 <sup>ND</sup>	Do
	3 <sup>RD</sup>	Do
	4 <sup>TH</sup>	Excavation of foundation, b) Masonry works, c) Plumbing works d) Painting (interior/ exterior), e) Wood works, f) Fabrication & concreting works, g)Flooring
	5 <sup>TH</sup>	Do
8 <sup>TH</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	<b>Introduction to Microsoft Project</b>
	3 <sup>RD</sup>	Do
	4 <sup>TH</sup>	Do
	5 <sup>TH</sup>	Project Management-Definition & concept
9 <sup>TH</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	Do
	3 <sup>RD</sup>	MS project scheduling for engineering
	4 <sup>TH</sup>	Do
	5 <sup>TH</sup>	Do
10 <sup>TH</sup>	1 <sup>ST</sup>	<b>Creating a project plan</b>
	2 <sup>ND</sup>	Do
	3 <sup>RD</sup>	Do
	4 <sup>TH</sup>	Creating project from a blank
	5 <sup>TH</sup>	Do
11 <sup>TH</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	<b>Basics of Microsoft Project</b>
	3 <sup>RD</sup>	Do
	4 <sup>TH</sup>	Do
	5 <sup>TH</sup>	<b>Tracking the project progress</b>
12 <sup>TH</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	Do
	3 <sup>RD</sup>	<b>Tracking the project progress</b>
	4 <sup>TH</sup>	Do
	5 <sup>TH</sup>	Do



13 <sup>TH</sup>	1 <sup>ST</sup>	<b>Project Reporting</b>
	2 <sup>ND</sup>	Do
	3 <sup>RD</sup>	Do
	4 <sup>TH</sup>	<b>Custom views and field</b>
	5 <sup>TH</sup>	Do

**LEARNING RESOURCES :**

1. M. R. Samal & R.L. Sahoo Construction Management Kalyani Publication
2. PS Gahlot & B M Dhir Construction planning and management New age international Publishers
3. Robert L Peurifoy & Willium B Ledbetter Construction Planning equipment and methods TMH Education

*Rabhinarayan HOD*  
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Sign. of Faculty concerned

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Sign. of HOD  
Madhusmita Dehuri  
HOD, Civil Department  
Govt. Polytechnic, Koraput



**GOVERNMENT POLYTECHNIC, KORAPUT  
DEPARTMENT CIVIL ENGINEERING**

Discipline: <b>CIVIL ENGG.</b>	Semester: <b>6<sup>th</sup></b>	Name of the Teaching Faculty: <b>ABHISEK MOHANTY , PTGF</b>
Subject: <b>LAND SURVEY PRACTICE II</b>	No. of days/per week class allotted: <b>05</b>	Semester From date: <b>13.02.2023</b> To Date: <b>23.05.2023</b> No. of Weeks: <b>13</b>
<b>PRE-REQUISITE</b>	Basic knowledge about soil Survey.	
<b>COURSE OUTCOMES</b>	<b>CO1:</b> Set out circular curve in the field. <b>CO2:</b> Prepare survey map by conducting traverse survey with theodolite. <b>CO3:</b> Study and use of modern electronic surveying instruments for its different applications. <b>CO4:</b> Prepare contoured maps or plans requiring both the horizontal as well as vertical control .	
<b>Week</b>	<b>Class Day</b>	<b>Theory / Practical Topics</b>
1 <sup>ST</sup>	1 <sup>ST</sup>	TRIGONOMETRICAL SURVEYING & TACHEOMETRY
	2 <sup>ND</sup>	Do
	3 <sup>RD</sup>	Determination of height of 3 objects whose bases are accessible
	4 <sup>TH</sup>	Do
	5 <sup>TH</sup>	Determination of stadia constants
2 <sup>ND</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	Determination of horizontal distance an elevation with Staff vertical . by stadia method
	3 <sup>RD</sup>	Do
	4 <sup>TH</sup>	SETTING OUT CURVES AND SITE SURVEYING
	5 <sup>TH</sup>	Do
3 <sup>RD</sup>	1 <sup>ST</sup>	Setting out a simple circular curve by offsets from long chord
	2 <sup>ND</sup>	Do
	3 <sup>RD</sup>	Setting out a simple circular curve by offsets from the tangent
	4 <sup>TH</sup>	Do
	5 <sup>TH</sup>	Setting out a simple circular curve by offsets from chords produces
4 <sup>TH</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	Setting out a simple circular curve by Rankine's method of tangent angle (Deflection angles) Setting out a site the center line and foundation width of a building from the given plan
	3 <sup>RD</sup>	Do
	4 <sup>TH</sup>	Dividing an area into plots of given size
	5 <sup>TH</sup>	Do
5 <sup>TH</sup>	1 <sup>ST</sup>	STUDY OF MAP AND MAP SERIES
	2 <sup>ND</sup>	Do

	3 <sup>RD</sup>	Physical Map	
	4 <sup>TH</sup>	Do	
	5 <sup>TH</sup>	Topographic Map	
	6 <sup>TH</sup>	1 <sup>ST</sup>	Do
		2 <sup>ND</sup>	Road Map
3 <sup>RD</sup>		Do	
4 <sup>TH</sup>		Political Map	
5 <sup>TH</sup>		Do	
7 <sup>TH</sup>	1 <sup>ST</sup>	Economic & Resources Map	
	2 <sup>ND</sup>	Do	
	3 <sup>RD</sup>	Thematic Map	
	4 <sup>TH</sup>	Climate Map	
	5 <sup>TH</sup>	Do	
8 <sup>TH</sup>	1 <sup>ST</sup>	Open Series map and Defense Series Map	
	2 <sup>ND</sup>	Do	
	3 <sup>RD</sup>	STUDY ON GPS & DGPS AND ETS	
	4 <sup>TH</sup>	Do	
	5 <sup>TH</sup>	GPS: - Global Positioning, GPS Signals, Errors of GPS, Positioning Methods	
9 <sup>TH</sup>	1 <sup>ST</sup>	Do	
	2 <sup>ND</sup>	DGPS: - Differential Global Positioning System	
	3 <sup>RD</sup>	Do	
	4 <sup>TH</sup>	Rover GPS Set up	
	5 <sup>TH</sup>	Do	
10 <sup>TH</sup>	1 <sup>ST</sup>	Download, Post-Process and Export GPS data	
	2 <sup>ND</sup>	Do	
	3 <sup>RD</sup>	Sequence to download GPS data from flashcards	
	4 <sup>TH</sup>	Do	
	5 <sup>TH</sup>	Sequence to export post process GPS data	
11 <sup>TH</sup>	1 <sup>ST</sup>	Do	
	2 <sup>ND</sup>	ETS: - Electronic Total Station	
	3 <sup>RD</sup>	Do	
	4 <sup>TH</sup>	Leveling	
	5 <sup>TH</sup>	Do	
12 <sup>TH</sup>	1 <sup>ST</sup>	Reference networks	
	2 <sup>ND</sup>	Do	
	3 <sup>RD</sup>	STUDY OF GIS AND MAP PREPARATION USING GIS	
	4 <sup>TH</sup>	Do	
	5 <sup>TH</sup>	Components of GIS, Integration of Spatial and Attribute Information	
13 <sup>TH</sup>	1 <sup>ST</sup>	Do	
	2 <sup>ND</sup>	Attribute Data Management and Metadata Concept	
	3 <sup>RD</sup>	Do	
	4 <sup>TH</sup>	Editing the layers	
	5 <sup>TH</sup>	Do	

**LEARNING RESOURCES:**

- 1 D. Gaikwad Advanced Surveying S.Chand
- 2 B. C. Punmia Surveying Vol. I, II, III Laxmi Publication, Delhi - 06
- 3 R. Agor A text book of surveying and leveling Khanna Publishers, Delhi 6
- 4 N. N. Basak Surveying and Levelling Tata Mcgraw Hill

Abhishek Mohanty  
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## GOVERNMENT POLYTECHNIC, KORAPUT DEPARTMENT CIVIL ENGINEERING

Discipline: <b>CIVIL ENGG.</b>	Semester: <b>6<sup>th</sup></b>	Name of the Teaching Faculty: <b>MADHUSMITA DEHURI , HOD CIVIL</b>
Subject: <b>LIFE SKILL</b>	No. of days/per week class allotted: <b>02</b>	Semester From date: <b>13.02.2023</b> To Date: <b>23.05.2023</b> No. of Weeks: <b>13</b>
<b>PRE-REQUISITE</b>	Basic knowledge about Personal traits.	
<b>COURSE OUTCOMES</b>	<b>CO1:</b> Developing communication skills <b>CO2:</b> Developing intra persona skills <b>CO3:</b> Developing decision making skills	
<b>Week</b>	<b>Class Day</b>	<b>Theory / Practical Topics</b>
1 <sup>ST</sup>	1 <sup>ST</sup>	Social skill
	2 <sup>ND</sup>	Society, Social Structure, Develop Sympathy and Empathy
2 <sup>ND</sup>	1 <sup>ST</sup>	<b>PROBLEM SOLVING</b>
	2 <sup>ND</sup>	Steps of Problem solving:
3 <sup>RD</sup>	1 <sup>ST</sup>	Presentation skill
	2 <sup>ND</sup>	Voice and language – Volume, Pitch, Inflection, Speed, Pause
4 <sup>TH</sup>	1 <sup>ST</sup>	Group discussion and interview techniques
	2 <sup>ND</sup>	<i>Interview technique</i>
5 <sup>TH</sup>	1 <sup>ST</sup>	Working in team
	2 <sup>ND</sup>	Leadership in teams, Handling frustrations in group
6 <sup>TH</sup>	1 <sup>ST</sup>	Task management
	2 <sup>ND</sup>	Introduction, Task identification, Task planning , Organizing and execution, Closing the task
7 <sup>TH</sup>	1 <sup>ST</sup>	Swot analysis
	2 <sup>ND</sup>	Analyse yourself with respect to your strength and weaknesses, opportunities and threats. Following points will be useful for doing swot.
8 <sup>TH</sup>	1 <sup>ST</sup>	Solve the true life problem assigned by the teacher
	2 <sup>ND</sup>	Working in a team
9 <sup>TH</sup>	1 <sup>ST</sup>	Form a group of 5-10 students and do a work for social cause e.g. tree plantation, blood donation, environment protection, camps on awareness like importance of cleanliness in slum area, social activities like giving cloths to poor etc.
	2 <sup>ND</sup>	Mock interview
10 <sup>TH</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	Discuss a topic in a group and prepare minutes of discussion.
11 <sup>TH</sup>	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	Deliver a seminar for 5 minutes using presentation aids on the topic given by your teacher
12 <sup>TH</sup>	1 <sup>ST</sup>	Do

13 <sup>th</sup>	2 <sup>ND</sup>	Task management
	1 <sup>ST</sup>	Do
	2 <sup>ND</sup>	Decide any task to be completed in a stipulated time with the help of teacher. Write a report considering various steps in task management

**LEARNING RESOURCES:**

1. Dr. B.C.Punmia , Soil Mechanics & Foundation Engineering Laxmi publications (P) LTD
2. Dr. K.R.Arora , Soil Mechanics & Foundation Engineering Laxmi publications (P) LTD
3. Dr. V.N.S. Murthy , Soil Mechanics & Foundation Engineering, Vol-I UBS Publishers Distributors Ltd.

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12/02/23

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Sign. of HOD

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